

REMARKS

This Amendment, submitted in response to the Office Action dated May 19, 2004, is believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested.

Claims 1-9 are all the claims pending in the application. Claims 1-3 and 9 have been allowed and claims 5-7 have been found to be directed to allowable subject matter and would be allowed if rewritten in independent form. Claims 4 and 8 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Mutoh et al. Applicant submits the following in traversal of the rejection.

I. Rejection of claim 4 under § 102(b) as being anticipated by Mutoh

In rejecting claim 4 as being anticipated by Mutoh, the Examiner asserts that Mutoh “discloses dithering of a multi-bit gray level signal and the printing of the dithered output in dots of differing sizes” citing Fig. 4, and col. 4, lines 34-55 in support.

Applicant disagrees with the Examiner’s analysis for at least the following reason.

Claim 4 recites:

A method for multi-bit processing of a gray scale image in a printer, comprising:
multi-bit dithering each pixel of input image expressed as a gray component, and
causing said multi-bit dithered image to be printed in a dot of a respectively different size according to a gray component value of each pixel.

Mutoh does not pertain to the processing of a gray scale image in a printer. In particular, Mutoh pertains to the processing of a color image. See col. 6, lines 49-60 (The R, G, and B

signals from the display are subjected to A/D conversion by the video interface and transferred to a frame memory by DMA. The data transfer by DMA is controlled by a DMA controller. The R, G, B data written in the frame memory is processed as color-converted for each pixel.)

Further, there is no indication of multi-bit dithering each pixel of an input image expressed as a gray component.

Although Mutoh describes “tone reproduction by the combination of dot pattern modulation and several stepwise varying dot diameters or by the combination of multi-level dither and variations of dot diameter,” (see col. 4, lines 38-42) there is no indication that a multi-bit dithered image is printed in dots of respectively different sizes according to a gray component value of each pixel.

Moreover, there is no indication of multi-bit processing in Mutoh.

Since the Examiner has not established that all of the elements of claim 4 are disclosed in Mutoh, Mutoh does not anticipate claim 4. Consequently, claim 4 and its dependent claims should be deemed patentable.

II. Rejection of claim 8 under § 102(b) as being anticipated by Mutoh

In rejecting claim 8 as being anticipated by Mutoh, the Examiner asserts that Mutoh “discloses the use of pulse width modulation to generate the dots corresponding to a given gray level signal” citing Fig. 7, and col. 5, lines 61- col. 6, line 4 in support.

Applicant disagrees with the Examiner’s analysis for at least the following reason.

Claim 8 recites:

A method according to claim 4, wherein the step of causing said multi-bit dithered image to be printed comprises:

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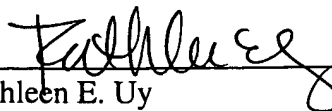
modulating said multi-bit dithered image to a
respectively different pulse width according to the
gray component value of its pixel, and
causing the modulated image to be printed in dots of a
respectively different size.

Col. 5, line 61 to col. 6, line 4 describes the relationship between a pulse width tw of a
pulse-width modulated jet and the flow rate of ink used for recording. There is no indication in
Mutoh that a multi-bit dithered image is modulated to a respectively different pulse width
according to a gray component value of its pixel. Consequently, claim 8 should also be deemed
patentable.

In view of the above, reconsideration and allowance of this application are now believed
to be in order, and such actions are hereby solicited. If any points remain in issue which the
Examiner feels may be best resolved through a personal or telephone interview, the Examiner is
kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue
Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any
overpayments to said Deposit Account.

Respectfully submitted,


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